
Child Care Choices: A Longitudinal Study of Children, Families and Child Care in Partnership with Policy Makers

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Abstract

Child Care Choices is an example of new early childhood research based on a relationship between policy makers and researchers. It is also an example of large-scale longitudinal team-based research into early childhood in Australia. The ongoing study addresses the professional problem for practitioners and policy makers of the increasing use of multiple care settings and changes to care arrangements in the early years and their possible impacts on child development. The project will follow an initial sample of 693 families with a child aged from birth to three years over a three-year period. An ecological framework is used to include the influences on child development of characteristics of the children and their families, their city or country location, as well as their childcare history and current care arrangements. Development is measured in terms of children's health, motor development, social and emotional development, language and communication as well as emerging literacy and numeracy. The article discusses the unique features of the project in Australian early childhood research, its history, preliminary findings, and the potential of this kind of large-scale, longitudinal team-based research conducted in partnership with policy makers to contribute to policy as well as to theoretical debate.

Recent Australian Association for Research in Education (AARE) publications have focused on the changing role and state of research affecting Australian education and schooling (e.g. Edwards 2003, Gill 2004). It is important that the selection of papers on Australian research into early childhood education and care in this journal issue speaks to the issues raised by the wider education research field. The ongoing Child Care Choices study of the effects of multiple and changeable childcare on the development of young children is presented in this article as located within the broad frame of large-scale studies generated by government research agendas and as exemplifying what Figgis, Zubrick, Butorac and Alderson (2000) refer to as 'user-centric' research.

The term 'user-centric' refers to research that has as its basis a relationship between practitioners/policy makers and researchers. What the practitioners/policy makers bring to the model is a professional problem that is the motivation for wanting (and using) research knowledge. Figgis et al. point out that 'the potential for research to be meaningful lies in *their* reaching out for it' (2000, p. 367). In the case of Child Care Choices, *they* were childcare practitioners and policy makers who were concerned about what they saw as an increasing trend for young children to use multiple childcare settings and for childcare arrangements to be changed frequently. What the researchers bring to the relationship is their research knowledge and expertise.

In the Child Care Choices project, a team of early childhood, psychology and social science researchers was brought together in response to a request by the Office of Child Care in the NSW Department of Community Services to provide a range of research skills and experience to address this problem. In the Figgis et al. (2000) model, the relationship between practitioners/policy makers and researchers is a 'connecting web' that draws on the expertise of both groups to address a 'real issue' (p. 367). We believe that there is much about the Child Care Choices study that is in accord with this model.

In seeking to find an appropriate research methodology for comprehensively addressing the professional problem of multiple and changeable childcare, the Child Care Choices research team drew on relevant existing longitudinal studies of families, children, and educational and developmental outcomes. These included international research, such as the US Early Childhood Longitudinal Study (National Center for Education Statistics 2001), the National Institute for Child Health and Development Early Child Care Study (NICHD Early Child Care Research Network 1996, 1997, 1998, 2000), and the Early Head Start Study (Raikes and Tarullo 1999), as well as Australian studies, such as the Sydney Family Development Project (Harrison and Ungerer 1997, 2000), the Longitudinal Literacy and Numeracy Study (Doig, Rowe and McCrae 2002), and *Growing Up in Australia: The Longitudinal Study of Australian Children* (Sanson et al. 2002, Sanson 2003, Sanson, Johnstone and the LSAC Research Consortium, 2004).

These studies emphasised a need to address the question of childcare effects within a wider context of family, child and other contextual factors that may have a direct or indirect influence on children's educational and developmental outcomes. This approach, which requires a large sample size and complex statistical analysis, using multilevel modelling, is what makes the Child Care Choices study different from previous Australian early childhood research.

The project has also been designed to be flexible enough to respond to changing and growing research interests among the practitioners/policy makers and researchers. New questions have led to extension projects on the transition to school of children who have experienced multiple and changeable care arrangements, the childcare arrangements and experiences of Indigenous families, and the relationships that children in care develop at home and in their care settings. The first two projects are being conducted by research team members and the third project by a higher degree research student.

Working effectively as a research team is one of the challenges of this kind of research. Child Care Choices is also an example of large-scale, team-based research. Most early childhood research to date in Australia has been conducted by individual researchers or small groups of researchers. This paper will give an account of the process as well as the content of the research, documenting what is often left out of published reports of research. This is preceded by a short history of the project to place it in the context of research conducted in partnership with policy makers.

History of the project

The project began with an approach to researchers by the Office of Child Care in the Department of Community Services, New South Wales. It is an example of a research project that emerged from the experiences of practitioners and for which the Office of Child Care saw the need for further information and research. The office had become aware of concern in the early childhood field about what was seen as an increasing trend for young children to attend multiple childcare placements each week and for childcare arrangements to be changed frequently. The concern conveyed to the research team was that such inconsistency of care might affect children's development, particularly their emotional and social development, when they were in contact with a large number of changing caregivers and peers as part of their childcare arrangements in the first three years of life.

The Office of Child Care had commissioned an initial study into this issue and, based on findings that emerged from the parent focus groups in city and country areas in Goodfellow's (1999) research, wished to investigate the issue in a larger and more

representative sample. Goodfellow concluded that the high cost of formal child care and the shortfall in places for younger children were the main reasons behind the 'patchwork' of childcare arrangements made by parents of young children, results that suggested such arrangements were made of necessity rather than choice.

The study also quoted parents who were satisfied with multiple care arrangements and who said that it was their child's interests that had prompted their choices of care. These parents thought that their children would benefit from regular care with their grandparents, for example, or from a range of different children at different care settings. The reasons for multiple and changeable childcare arrangements were to be a focus of the Child Care Choices study along with the developmental outcomes for children.

To achieve the scale of study needed to investigate children from both city and country areas over time and on a comprehensive range of measures, an ARC Linkage grant application was developed by the researchers who had drawn together for the study from Macquarie University, Charles Sturt University and the Australian Institute of Family Studies, with the Department of Community Services as the industry partner.

Literature review

Our task at the beginning of the project was to research the literature relating to the effects on children of multiple and changeable childcare and to bring our knowledge and experience together to design the project. The review of literature demonstrated that there was a vast literature that compared children in childcare with children who were cared for solely at home and studies often focused on the question 'Is child care bad for children?' (Sims 2003). Research focusing on the features of care that make a difference for children's development was a relatively recent phenomenon (Nielsen-Hewett, Coutts and Hayes 2004). Only a few US studies (e.g. NICHD Early Child Care Research Network 1997) had examined, generally as a sub-question, the impact of multiple and changeable childcare on children's development.

Several studies in the last ten years have noted that in Australia and overseas it is becoming common for young children to experience multiple forms of care, both at any one point in time and over time (Harrison and Ungerer 1997, 2000, Goodfellow 1999, Ochiltree and Edgar 1995, Rodd 1996). Although this issue was not their primary research focus, the National Institute of Child Health and Human Development (NICHD) multi-site study in the USA found that over the first year of life almost all infants in care were in more than two arrangements. They reported that, on average, 36.5 per cent had three or more non-parental arrangements in their first year (NICHD 1997). In Australia, Goodfellow (1999) found that 31 per cent of a sample of parents

in NSW indicated use of multiple arrangements for their children, with a range from one to eight types of care per week. The study found that children under three years often experienced three or more types of care per week. Harrison and Ungerer (2000) reported changes of care arrangements from birth to twelve months, twelve to thirty months and thirty months to six years and noted considerable variation in individual patterns. Thirty per cent of children experienced highly stable care arrangements (less than one change for each period), half had a moderate level of change (1 to 1.4 changes for each period), and twenty percent had a high level of change (two changes for each period). Apart from these studies, however, there was little data to indicate the prevalence of multiple and changeable childcare in Australia. The first task of the Child Care Choices study would be to provide this kind of descriptive information.

The reasons why parents use mixed childcare arrangements or change the care arrangements for their child were also not clear from the literature. In contrast to Goodfellow's (1999) findings that financial barriers and accessibility of care were major factors in parents' choice of multiple arrangements, Ochiltree and Edgar (1995) reported that parents used such arrangements because of changing family circumstances or to maximise the quality of care for their child. Harrison and Ungerer (1997, 2002) suggested that a key reason for parents' choice of care for their younger children was the comfort they felt with relatives or friends. As a result, babies were often cared for by a number of different trusted adults.

Although previous studies had alerted us to the occurrence and possible outcomes of multiple and changeable childcare for children, apart from the Goodfellow (1999) study, no previous research had set out to investigate these specific phenomena, particularly in the context of Australian childcare. It is helpful, however, to summarise the indications of risk that have been associated with multiple and changeable care reported in previous research. Negative outcomes for children have been reported in some studies. Forty-two per cent of parents of children in multiple childcare arrangements in Goodfellow's (1999) study said that their children showed negative behaviour in childcare. The children were reported as being confused or lost in the group, being tired or unhappy and as having difficulty forming relationships. Similarly, in an article that reported on this aspect of childcare, the USA-based NICHD Early Child Care Research Network (1998) reported that children who had experienced a number of different care arrangements in their first two years exhibited more problem behaviours than children who had been in fewer care arrangements.

Multiple childcare arrangements may also be associated with outcomes for children beyond the childcare setting. Multiple and changeable childcare have been associated with lower intelligence scores (Whitebook, Howes and Phillips 1990), poorer social

relationships (Howes and Stewart 1987), more behaviour problems in the first two years (Vandell and Corasoniti 1990) and more insecure attachment with mothers particularly when mothers were less sensitive and responsive to their children (Harrison and Ungerer 1997, NICHD Early Child Care Research Network 1998). When there was a consistent pattern of high levels of changes in care in the first six years, children were found to exhibit more behavioural problems in their first year of school (Harrison and Ungerer 2000). Overall, the NICHD study concluded that available evidence indicates that the use of multiple childcare arrangements may lead to negative outcomes for children, at least in the short term.

The literature review provided grounds for concern that multiple childcare arrangements may be deleterious to children in the early years of development. In general terms, psychological theory and research both point to the importance of predictability and familiarity in young children's social worlds, for example, for the establishment of warm trusting relationships with parents, other carers and peers, and to provide the emotional security necessary for the exploration of their world (Bronfenbrenner 1979). Multiple childcare arrangements work against such predictability and familiarity.

More specifically, one important indicator of good quality childcare is stability of staff over time. This allows children to develop strong and trusting relationships with their carers (Howes and Hamilton 1993). Security of a child's attachment to the carer appears to promote positive social development. For example, Howes, Rodning, Galluzzo and Myers (1988) found an association between three-year-olds' attachment to their carers and positive engagement with peers. Furthermore, sensitive care giving requires a good knowledge of the individual child's particular characteristics. With multiple care, children attend many care-giving settings on a part-time basis. When a large proportion of enrolments are part-time, carers have responsibility for a larger number of children overall, and there is likely to be a dilution in the intensity of the relationship between individual children and the primary carer. Research has demonstrated that contact with high numbers of ever-changing carers jeopardises the quality of the care provided to children (Howes 1990).

Concern has also been voiced about the health implications of multiple and changeable care. Children are likely to be more vulnerable to infection when they are exposed to larger numbers of children and settings (Ferson 1994, 1997), and if they are stressed by their care arrangements. However, no systematic data on this issue are available.

Finally, parental stress is known to have an impact on the adequacy of parenting practices, the warmth of the parent-child relationship and the capacity of parents to

meet children's developmental needs, thereby interfering with children's optimal development and adjustment (Garbarino and Kostelny 1995). Goodfellow (1999) found that parents reported stress associated with the juggling of multiple care arrangements for their young children. Thus multiple childcare arrangements may have indirect effects on child development through their influence on parental stress levels.

In summary, we found that there was sufficient literature to indicate that multiple childcare arrangements could have an adverse impact on children's developmental outcomes. Identification of the nature of these effects, the particular circumstances in which they occur, and the kind of children they might have more impact on were important goals of this research.

Project design

To address the question of the effects on young children of multiple and changeable childcare, we decided to conduct a large-scale quantitative study so that we could gain an understanding of how common an experience it was for young children in NSW to experience multiple and changeable childcare, and to assess the impact of a range of child, family, community and childcare factors on developmental outcomes for children. The study adopted a sequential design with cross-sectional, longitudinal and time-lag components (see Table 1). The design involves three different age groups of children aged between one and three years when assessed at Time 1 and then reassessed twice at yearly intervals (Time 2, Time 3). This was designed to allow an economical assessment of a broad age span of children as well as providing the potential for collapsing age groups and increasing sample size across the age span of children who are the main users of childcare.

	Time 1 (T1)	Time 2 (T2)	Time 3 (T3)
Group 1 (age yrs)	0–1	1–2	2–3
Group 2 (age yrs)	1–2	2–3	3–4
Group 3 (age yrs)	2–3	3–4	4–5

Table 1: Design of Child Care Choices study: ages of children in years at each wave of data collection

There has been some deviation from the original design of yearly intervals for data collection because of delays in programming for telephone interviews and as a result of the impact of an extension study that required data collection in the months before and after school entry.

The study has multiple informants. We have sought information from the children themselves, the parent providing primary care for the child, the directors of childcare centres and the carers of the children in formal childcare. We did not have the resources to include other providers of care for the children in the study, although a range of questions asked parents about features of each care setting if multiple care was involved.

Method

The first of two important considerations in our decisions about sampling was that we wanted to find out about childcare arrangements in the city and the country because we thought they might be very different due to the relative lack of choice of care in rural areas. The second consideration was that we wanted to have families in the study from a range of socioeconomic status levels. We decided to recruit half of the sample from the city (Sydney) and half from the country (towns around Bathurst in western NSW). Information from the Australian Bureau of Statistics was used to decide which suburbs and towns to include on the basis of socioeconomic indicators such as average income and employment level. The Sydney sample extended from the inner city to the outer western suburbs of the city.

Recruitment of families for the study took place in long day care and family day care settings. The decision to recruit families through formal childcare providers meant that the study was unable to include families with multiple informal care arrangements. Since this was the first large-scale Australian study to investigate multiple and changeable childcare, this restriction on the study's generalisability was considered an acceptable limitation in order to explore key questions from a more readily accessible group of participants. In addition, the users of formal childcare are of central concern to the NSW Department of Community Services who were joint funders of the study.

Parents were invited to fill out a one-page form about the current weekly care arrangements for their child when they arrived at the centre or family day care home to leave or collect their child. They were also asked to provide telephone contact details if they were interested in participating in the Child Care Choices study.

Methods of data collection in the study have included:

- Questionnaires to parents asking them about their child and the care arrangements they had made for their child. The questionnaires also asked parents questions about their family and aspects of their child's development such as language and motor development and health. Directors of childcare centres and carers of the

children in the study also provided information about their centres and the children in the study through brief questionnaires.

As far as possible, standardised measures were used that had good validity and reliability and that had been used in recent similar research. This will allow us to compare findings with other studies using the same measures, particularly the *Longitudinal Study of Australian Children* study that has begun data collection this year. Standardised measures used in the questionnaires have included the Infant/Toddler Temperament Questionnaire (Fullard, McDevitt and Carey 1984), the Behavior Checklist (Richman, Stevenson and Graham 1982), and the Social Skills Rating System (Gresham and Elliott 1990).

- A telephone interview was used in the first year of the study to ask additional questions of parents. The decision to use a telephone interview was influenced by our access to a computer-assisted telephone interview system at the Australian Institute of Family Studies. The CATI (Computer-Assisted Telephone Interview) system involves trained interviewers in Melbourne conducting a programmed interview with parents and recording responses on a keyboard during the interview. The computer program enters those responses directly into a data file that is then available to the research team for analysis. In the second year of the study we decided to use only telephone interviews with parents as this was an easier way for them to participate than responding to questionnaires or face-to-face interviews. Standardised measures used in the interviews included the Vinelands Adaptive Behavior Scales (Sparrow, Balla and Cicchetti 1984) and the Family Adaptability and Cohesion Scale (Olson, Portner and Bell 1982).
- Observations by researchers in the project were used to record information about the primary childcare centres and family day care homes that the children in the study are currently attending. This was to obtain a measure of the quality of care in that setting. Measures used for this purpose were the ITERS (Infant and Toddler Environment Rating Scale), FDCRS (Family Day Care Rating Scale) and ECERS (Early Childhood Environment Rating Scale) (Harms, Cryer and Clifford 1990, Harms and Clifford 1989, Harms, Clifford and Cryer 1998).

As several different people from the project have been conducting these observations, one very important consideration for us has been to establish inter-rater reliability and to maintain that reliability. This was done by training on the observation scales using both training tapes and 'practice' childcare centres that were not in the sample. Following establishment of initial reliability of over 90 per cent for all codes, reliability checks with pairs of coders have been conducted every four weeks.

Challenges of team-based research

The following two sections deal with challenges faced and solutions found in the course of conducting large-scale team-based research of this kind.

Communication within the research team

The geographic spread of team members was the first challenge in developing a productive research team. To work on the initial research design, face-to-face meetings proved most productive. Team members from Melbourne and Bathurst travelled to Sydney several times over a year for this purpose.

With funding from Macquarie University and the NSW Department of Community Services, the team conducted a pilot study to inform the preparation of an ARC Linkage grant application. Over the following year, questionnaires and telephone interviews were developed and piloted with 50 families and an application was prepared on the basis of the team's hands-on experience with the pilot project.

The patterns of working together as a team that had developed during the pilot study persisted for the main study that began following news that the grant application had been successful. While the whole team was responsible for all aspects of research planning in team meetings or teleconferences, Macquarie University took responsibility for team leadership, compilation of questionnaire measures, data management and collection of data for the city sample. Charles Sturt University took responsibility for data collection for the country sample and the Australian Institute of Family Studies took responsibility for compiling, programming and conducting interviews with all families through their computer-assisted telephone interview system. All team members have been involved in the planning of new waves of data collection and in the analysis of results from the emerging data set.

Processes of decision making

Funding for the project meant that working as a team was made easier by funding for travel to meetings held about three times a year at Macquarie University, and for monthly teleconferences that allowed all team members to contribute to decisions about the project and be kept up to date about progress on data collection at all three sites.

Beyond the many decisions about research design and measures that needed to be made, particularly at the beginning of the project, there was also consideration of strategies to keep families and carers interested in continuing their participation over the three years of the study. We decided to produce a six-monthly newsletter to parent and carer participants giving news about the project and the research team,

and interesting additional information about other early childhood research and resources. A project web site is a more recent initiative under development, designed to enable communication to research participants in a different and additional way to the newsletter. An early task of the research team was to decide on the design for a poster for childcare centres and family day care schemes to alert parents and carers to the study, and for designing birthday cards to be sent to the children in the study each year, signed by research team members.

More weighty decisions for the team related to any change from the original research design. The main change to the research design was the introduction of face-to-face assessment of children. This was omitted from the original grant proposal because of the logistics involved in conducting interviews with a large number of children either at their care setting or at home. On the basis of feedback from an early presentation of the study at an international conference (Bowes et al. 2002a), however, we decided not to rely solely on reports of the children's development.

We decided to change the original design by assessing the children's development ourselves in addition to the developmental reports from parents and carers. As a result, all children have been assessed once they had reached the age of three years on a short battery of tests that had also been used by researchers of the Head Start program in the USA (Zill, Resnick and McKey 1999). Further measures are planned for children aged four years and older as children move through the study in future years.

The planning of conference presentations and publications on the project as well as the issue of authorship of any written output from the study have been discussed at several of our research team meetings. It is important that any research team establish a policy on authorship at the beginning of their project. We decided to include the names of all research team members on most papers to reflect the continuing considerable contribution made by everyone to the design and direction of the project with the main authors in primary position in the list.

At this stage of the project, we have several publications for practitioners and policy makers that cover preliminary results from the first wave of data collection (Bowes et al. 2002b, Bowes et al. 2003a, Bowes et al. 2003b) in addition to presentations at national and international conferences.

At several points of the project, decisions had also to be made by the team about the scope of the project. In any exciting project like this, new questions emerge and team members are tempted to add new measures or pursue different research directions from those in the original grant proposal. These suggestions have been presented to

a group and a decision made by the combined team at a face-to-face meeting. Budgetary considerations have generally restricted such additions although recent additional funding will now allow some of the new research questions to be pursued.

Preliminary findings

Some of the preliminary findings of the study based on the data as it was collected during wave 1 of data collection were reported in these initial publications and conference presentations. The main findings are summarised below:

- The use of multiple care arrangements for children less than three years of age is relatively common in NSW with 45 per cent of 363 study participants reporting weekly care arrangements that involve two or more settings (Bowes et al. 2003b).
- Childcare in the first three years also has a reasonably high rate of changeability. Twenty-six per cent of 363 parents reported one or more changes in childcare arrangements over the past twelve months (Bowes et al. 2003b).
- Despite income, educational and other differences between city and country parents in the study, the level of multiple and changeable child care was similar in the two locations (Bowes et al. 2003b, Harrison et al. 2002).
- Parents reported a high degree of satisfaction with their child's care (a mean of 4.4 on a 5-point satisfaction scale) and gave reasons for multiple care arrangements that indicated that the arrangements were a preferred rather than a constrained choice. Most parents rated convenience and reasons that indicated that they had the child's interests in mind as reasons that applied to them in relation to multiple care arrangements. An example of the latter is 'I like my child to be able to interact with different adults and children'. Reasons of affordability of care and access to care choices were less often endorsed than would have been expected from previous research (Bowes et al. 2003b).
- In contrast, reasons for changes in care were more likely to relate to the previous care arrangement becoming unavailable or to staff turnover in childcare centres (Bowes et al. 2003b).
- In terms of parental responsibilities in managing childcare, mothers were found to take a lead role in arranging and managing childcare, transporting children to and from care and caring for children when they were too sick to attend. Fathers were more likely to be involved in transport and choice of care (Bowes et al. 2003a, Bowes et al. 2004).
- Children's language and communication skills were the first child development indicators to be examined for links to multiple childcare. On the initial sample of

363 children, the following were all found to be predictors of children's language skills: age (older children had higher scores), gender (girls had higher scores), health (poor health predicted lower language scores), birth order (first-borns had higher scores), and mother's education (children of more highly educated mothers had higher scores). In a regression analysis, multiple care was found to contribute to the children's language and communication scores over and above these predictors (children in two or more care settings a week had higher scores than children in one setting) (Bowes et al. 2002a, Harrison et al. 2003). On the full sample of 693, while the same trend was present, multiple care was no longer a statistically significant predictor of children's language development scores (Sanson et al. 2004).

- Dealing with multiple care arrangements did not seem to increase the daily parenting stress felt by participants. Age of the child (having a toddler) was a better predictor of the intensity of daily hassles reported by parents (Bowes et al. 2003a, Bowes et al. 2004).

Benefits of the research approach

There are many benefits for researchers working in partnership with policy makers. In this study, the NSW Department of Community Services has contributed not only valuable financial and in-kind support. Personnel associated with the project have contributed expertise in issues of childcare provision at every stage of the project, from research planning to assistance in sampling, provision of contact details for childcare centres and family day care schemes, and dissemination of findings from the study. A partnership also means that the policy implications of the study's findings will be pursued, with recommendations more likely to effect change than is the case for studies undertaken by independent researchers.

The emphasis in this study is on including a large number of variables suggested by the ecological approach and investigating their interactions in a large sample representative of city and rural families with young children. While it does not restrict the range of variables investigated, the size of the study does limit the depth of information that we can obtain. Nevertheless the study will provide a comprehensive base for further studies to investigate in depth the experiences of parents, childcare professionals and children in relation to multiple childcare, and to study the processes by which such care leads to particular outcomes for particular children.

Significance of the study

The Child Care Choices study is the first large-scale Australian study designed specifically to assess the impact of multiple and changeable childcare arrangements on child outcomes. Using a scientifically rigorous and comprehensive ecological approach, it will contribute to research in the field by identifying the nature of the impact of multiple and changeable childcare arrangements on children and the processes by which childcare environments contribute to children's development. It will contribute to policy by providing crucial information for the development of policy on childcare provision and for planning of flexibility in service delivery. It will also help pinpoint areas of particular need for quality childcare options and provide data on differing childcare needs of urban and rural/regional families.

Both policy and research outcomes of this study will facilitate the provision of better services to children and their families in Australia in the first years of children's lives. This is a time when children's brain development is most rapid (Shonkoff and Phillips 2000) and when interventions such as quality childcare have been shown to be most cost-effective in terms of the costs of later educational and social programs (Schweinhart, Barnes and Weikart 1993). The need to 'get it right' for early childhood service provision for families is clear and the design of such services depends on an Australian-specific knowledge base, grounded in rigorous research. Child Care Choices will contribute to that knowledge base to provide data for policy and planning in addition to contributing to the theoretically interesting question of the importance of continuity of care for young children.

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